



Schedule of Operation & Maintenance Charges 2016

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Commercial and Renewable Regulation
Asset Management
ESB Networks Ltd.

1.1 Background

Generators connected to the Distribution system are required to pay an annual charge to ESB Networks for the operation and maintenance of the substations, overhead lines, and cables built to connect their facility to the Distribution system. The annual charges are based on a standard amount per km line or cable and per item of substation equipment and, for transparency, are itemised in the same manner as the generator standard charges. These standard amounts are referred to as Operation and Maintenance unit charges.

1.2 General Points on O&M unit costs

The operation and maintenance unit costs are intended to reflect only the additional operation and maintenance costs which will be incurred by the DSO arising from the generator connection. For example, when it is proposed to replace transformers in an existing substation with larger units to allow for connection of a generator, then only the extra O&M cost arising from the larger transformers is included in the O&M unit cost. In addition where an item of plant is shared by a number of generators, they will also share the relevant O&M charge on an annual basis. The share will be on a per MW basis and will be calculated in the same manner as the share of the capital cost.

The O&M unit costs covered in this submission cover operation and maintenance costs on distribution assets only. They are not intended to cover O&M costs on transmission assets.

In practice the O&M costs incurred on a given section of line or item of plant will vary from year to year. However, it is proposed to levy an annual charge based on the estimate of the average cost over the first 20 years of service but incremented annually for inflation. 20 years is the length of the connection agreements offered to generators.

1.3 Make up of O&M charges

The O&M costs arising from generator connections consist of the following types of cost:

- *Planned Maintenance activities*

These are activities generally carried out on a cyclic or “as needed” basis. The planned maintenance component of the unit costs is based on ESB maintenance policies for the type of plant involved.

- *Fault repair activities.*

The fault repair component is based on an estimate of fault repair costs in the first 20 years of service.

- *Line Diversion.*

This cost arises in the case of overhead lines.

On construction of a line, ESB commits to landowners to divert a section of line free of charge if required in the event that planning permission is obtained for a new house or structure conflicting with line

- *Rates*

ESB pay rates to the local authorities based on the depreciated replacement costs of its networks assets. The O&M unit costs contain a component to reflect the additional rates payable by ESB Networks for assets used to connect the generator.

- *Telecommunication costs*

Telecommunication costs arise in relation to meters and SCADA equipment at the generator sites.

2. ESB OPERATION AND MAINTENANCE CHARGES FOR YEAR 2016

| | Network Asset Type | Unit of Charge | Amount excl rates | Rates | Total Amount due (€) |
|---|--|----------------|-------------------|--------|----------------------|
| Line Work | | | | | |
| 1. | Standard 110kV line (300ACSR) | Per km | 1,114 | 1,242 | 2,356 |
| 2. | 38kV 300ACSR | Per km | 1,103 | 656 | 1,759 |
| 3. | 38kV150AAAC (Mulberry) Line | Per km | 446 | 529 | 975 |
| 4. | 38kV 100ACSR | Per km | 446 | 415 | 861 |
| 5. | MV 150ACSR/92 SCA | Per km | 281 | 310 | 591 |
| Cable Costs (excludes all civil works and ducting) | | | | | |
| 6. | 110kV cable | Per km | 218 | 2,806 | 3,024 |
| 7. | 38kV cable | Per km | 186 | 1,012 | 1,198 |
| 8. | MV cable | Per km | 135 | 416 | 551 |
| 9. | 38kV cable end mast | Per mast | - | 332 | 332 |
| 10. | 110kV cable end mast | Per mast | - | 1,163 | 1,163 |
| Station Work | | | | | |
| 110kV stations | | | | | |
| 11. | 110kV/MV station incl. equipment (2*20MVA) | Per station | 23,604 | 23,921 | 47,525 |
| 12. | 110kV/38kV 63MVA green field transformer package | Per station | 13,971 | 12,880 | 26,851 |
| 13. | 110kV/38kV 31.5MVA green field transformer package | Per station | 13,826 | 9,701 | 23,527 |
| 14. | 110kV/MV 20MVA green field transformer package | Per station | 13,587 | 8,408 | 21,995 |

| | Network Asset Type | Unit of Charge | Amount excl rates | Rates | Total Amount due (€) |
|----------------------|--|----------------|-------------------|--------|----------------------|
| 15. | 110kV/MV 31.5MVA green field transformer package | Per station | 13,826 | 10,283 | 24,109 |
| 16. | 1*31.5MVA to 2*31.5MVA | | 3,405 | 7,058 | 10,463 |
| 17. | 2*31.5MVA to 2*63MVA | | 291 | 7,681 | 7,972 |
| 38kV stations | | | | | |
| 18. | 38kV/MV Station incl. equipment (2*5MVA) | Per station | 11,729 | 9,660 | 21,389 |
| 19. | 38kV/MV 5MVA Green field transformer package | Per station | 9,207 | 4,056 | 13,263 |
| 20. | 38kV/MV 10MVA Green field transformer package | Per station | 9,300 | 4,415 | 13,715 |
| 21. | 38kV/MV 15MVA Green field transformer package | Per station | 9,332 | 4,652 | 13,984 |
| 22. | 38kV/MV - install 5MVA transformer into existing station – B/B extension | Per station | 1,772 | 4,163 | 5,935 |
| 23. | 38kV/MV - install 10MVA transformer into existing station – B/B extension | Per station | 1,865 | 4,519 | 6,384 |
| 24. | 38kV/MV – install 5MVA transformer into existing station no B/B extension | Per station | 1,733 | 3,293 | 5,026 |
| 25. | 38kV/MV – install 10MVA transformer into existing station no B/B extension | Per station | 1,827 | 3,646 | 5,473 |
| 26. | Uprate 2*5MVA to 2*10MVA | | 186 | 705 | 891 |

| Miscellaneous Station items | | | | | |
|-----------------------------|---|----------------|-------------------|-------|----------------------|
| | Network Asset Type | Unit of Charge | Amount excl rates | Rates | Total Amount due (€) |
| 27. | 38kV cubicle in 38kV station | Per cubicle | 270 | 1,242 | 1,512 |
| 28. | 38kV cubicle in 110kV station | Per cubicle | 332 | 1,427 | 1,759 |
| 29. | MV cubicle in 110kV station | Per cubicle | 249 | 460 | 709 |
| 30. | MV cubicle in 38KV outdoor station | Per cubicle | 249 | 260 | 509 |
| 31. | MV cubicle with interface transformer | Per cubicle | 695 | 1,651 | 2,346 |
| 32. | MV terminal station without NULEC recloser (pre Gate 2 connections) | Per station | 177 | 230 | 407 |
| Metering and SCADA | | | | | |
| 33. | Metering and SCADA for 2MW-5MW site | Per site | 690 | - | 690 |
| 34. | Metering and SCADA for 5MW-10MW site | Per site | 805 | - | 805 |
| 35. | Metering and SCADA for >10MW site | Per site | 1,325 | - | 1,325 |
| 36. | Metering for <2MW site | Per site | 458 | - | 458 |
| 37. | Protection for MV<2MW | | 197 | 125 | 322 |
| 38. | Protection for MV>2MW, <5MW with SCADA via GPRS | | 321 | 136 | 457 |

| Metering and SCADA | | | | | |
|---|--|----------------|-------------------|-------|----------------------|
| | Network Asset Type | Unit of Charge | Amount excl rates | Rates | Total Amount due (€) |
| 39 | SCADA for 38kV connections >2MW, <5MW and MV where no GPRS available | | 5,190 | 451 | 5,641 |
| 38kV customer compound [at windfarm site] | | | | | |
| 40 | 38kV compound at developers site – overhead line incomer | Per station | 1,672 | 2,555 | 4,227 |
| 41 | 38kV compound at developers site – cable incomer | Per station | 1,672 | 2,586 | 4,258 |

Notes

1. Above Charges are exclusive of VAT
2. Where generators share elements of plant, the operation and maintenance charge will be divided pro-rata on the basis of their MEC. The charge will be based on the network as built except as outlined in 3. below.
3. Where the system operator decides to build other than the LCTA for system development reasons, the operation and maintenance charge will be based on the LCTA rather than the actual build
4. Operation and Maintenance Charges include a component for rates payable by ESB Networks to Local Authorities. These rates apply to transmission and distributions networks.